



(11) (A) No. 1 249 232

(45) ISSUED 890124

(52) CLASS 190-39

(51) INT. CL. B65D 3/22<sup>4</sup>

(19) (CA) **CANADIAN PATENT** (12)

(54) Drinking Vessels

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(21) APPLICATION No. 562,149

(22) FILED 880322

(62) DIV'N OF APPL'N No. 448,357 FILED 840227

(30) PRIORITY DATE U.S.A. (470,844) 830228  
U.S.A. (575,546) 840131

No. OF CLAIMS 15

Canada<sup>13-2</sup>

#### ABSTRACT OF DISCLOSURE

A drinking vessel comprises a first vessel member adapted to hold a liquid and a second vessel member associated with, but separated from, the first vessel member to form a barrier against the formation of condensation on the exterior surface of the second vessel member when a cold liquid is contained in the first vessel member. In one embodiment, the first vessel member comprises a removable insert which conforms generally to the configuration of the second vessel member to form a double-walled drinking vessel. Advantageously, a sanitary lip extends downwardly from the top edge of the insert and is proportioned and oriented to prevent a person's lip from contacting the second vessel member when the person takes a drink. Also advantageously, the drinking vessel includes ribs or serrations, or, preferably, a plurality of protuberances and engagement ridges, ridge segments or recesses associated between the insert and the second vessel member to provide a secure friction fit therebetween yet permit removal of the insert for disposal and subsequent replacement. In another embodiment, the first vessel member comprises a bowl member for holding a liquid and the second vessel member is a hollow stem member supporting the bowl from its base. A collar-like ridge is formed generally at the junction of the stem for collecting any condensation and directing it into the stem. The structure may be formed in two-piece structure or an essentially unitary structure. The structure may, however, include a detachable stem base portion or a stopper-plugged hole in the stem base to facilitate removal of the accumulated moisture.

BACKGROUND OF THE INVENTION

The present invention relates generally to drinking vessels, and, more particularly, to drinking vessels which provide an exterior surface portion that is virtually free of condensation and to reusable/disposable drinking vessels which provide a sanitary surface for drinking.

This application is a division of Canadian Patent Application Serial No. 448,357, filed February 27, 1984.

There have been many proposals for making various types of drinking containers or vessels, each adapted to satisfy a particular need. For example, there are containers which incorporate disposable liners, such as disclosed in U.S. Patent No. 3,352,449, to permit re-use of a permanent container. In other devices, such as disclosed in U.S. Patent No. 973,085, or 3,633,863, or 4,040,535, a coaster or holder arrangement is provided for snugly holding a tumbler and collecting, within the coaster, condensation forming on the tumbler.

Although such structures may prove satisfactory for their particular intended purpose, they fail to provide a drinking vessel with a sanitary disposable insert which conforms to the configuration of a permanent vessel member and provides a thermally insulative barrier as well as a condensation barrier, all in a simple-to-fabricate structure. Furthermore, there is no teaching of a condensation-free stemware piece.

It would appear desirable, therefore, to provide a

1 drinking vessel with disposable inserts which provides a  
2 thermally insulative barrier to help maintain the temperature  
3 of substances contained therein, to prolong the life of ice  
4 cubes when contained therein and, further, to shield the user  
5 from any dripping due to condensation forming on the vessel.

6 More importantly, as there is currently great concern  
7 for the transmission of various bacteria and infectious viruses  
8 and germs (particularly herpes simplex which can be readily  
9 transmitted through improperly sterilized drinking containers  
10 at restaurants, bars and other publically accessible  
11 establishments), there is a growing need for an attractive  
12 drinking vessel which can be used repeatedly yet assure  
13 germ-free drinking surfaces. Thorough sterilization requires  
14 expensive and well maintained machinery, as well as the time  
15 and effort of employees in collecting used glasses, stacking  
16 them for sterilization, operating the machinery and removing  
17 them after sterilization. It is, therefore, desirable to  
18 provide not only a condensation-free disposable drinking vessel  
19 but also one which provides protection against the transmission  
20 of infectious germs, viruses, bacteria and the like, all in an  
21 attractive and easy to make structure.

22 Accordingly, it is an object of the present invention  
23 to provide a new and improved drinking vessel having exterior  
24 surface portions essentially free of condensation.

25 It is another object of the invention to provide a new  
26 and improved drinking vessel having condensation-free exterior  
27 surface portions and a thermally insulative barrier for helping  
28 diminish heat loss or gain in any substance contained by the  
29 vessel. In addition, it is an object of the invention to  
30 provide a re-usable drinking vessel of the foregoing type that

1 permits re-use of a permanent drinking vessel member without  
2 requiring sterilization of the permanent member. It is a  
3 further object of the invention to provide a drinking vessel of  
4 the foregoing type which is easy to fabricate and yet forms an  
5 attractive drinking container.

6 It is also an object of the invention to provide a new  
7 and improved stemware structure which provides an essentially  
8 condensation-free exterior surface for handling, yet permits an  
9 elegant design to be incorporated in the stemware. It is  
10 another object of the invention to provide, in whole or in  
11 part, a disposable stemware structure which has an essentially  
12 condensation-free surface.

13 The foregoing specific objects and advantages of the  
14 invention are illustrative of those which can be achieved by  
15 the present invention and are not intended to exhaust the  
16 possible advantages which can be attained. Thus, these and  
17 other objects and advantages of the invention can be learned by  
18 practice with the invention as embodied herein or as modified  
19 in view of variations which will be apparent to those skilled  
20 in the art from the disclosed embodiments. Accordingly, the  
21 present invention resides in the novel parts, constructions,  
22 arrangements, combinations and improvements herein shown and  
23 described.

#### 24 25 SUMMARY OF THE INVENTION

26 Briefly described, the drinking vessel according to  
27 the present invention comprises a first vessel member adapted  
28 to hold a liquid or other desired substance and a second vessel  
29 member associated with, but separated from, the first vessel  
30 member to form a barrier against the formation of condensation

1 on an exterior surface of the second vessel member when a cold  
2 liquid or substance is contained in the first vessel member.  
3 In one embodiment, the first vessel member comprises a  
4 removable insert which conforms generally to the configuration  
5 of the second vessel member to form a double-walled drinking  
6 vessel with a space between the insert and the second vessel  
7 member. Advantageously, a sanitary lip extends downwardly from  
8 the top edge of the insert and is proportioned and oriented to  
9 prevent a person's lip from contacting the second vessel member  
10 when the person takes a drink. Also advantageously, the  
11 drinking vessel includes grasping means (in the form of a  
12 plurality of rib-like members or a band of serrations, or, as  
13 preferably embodied, a plurality of protuberances and  
14 cooperating engagement means) associated between the vessel and  
15 the second insert member to provide a secure pressure/friction  
16 fit therebetween yet permit removal of the insert for disposal  
17 and subsequent replacement by thrusting the second vessel  
18 member, open-side down, onto a stack of inverted inserts.

19 As preferably embodied, the grasping means include a  
20 plurality of protuberances formed on one of the vessel members,  
21 and engagement means formed on the other vessel member for  
22 cooperating with the protuberances to enable releasable locking  
23 engagement between the two vessel members. The engagement  
24 means may comprise a ring-like raised rib or ridge against  
25 which the protuberances can abut to resist separation of the  
26 two members or a ring-like recess adapted to register with and  
27 receive the protuberances. Alternatively, the engagement means  
28 may comprise a series of screw thread segments (in the form of  
29 either raised ridge segments or recess segments) adapted to  
30 permit threaded engagement by the protuberances when one vessel

1 member is turned or screwed down relative to the other. In any  
2 of the foregoing embodiments of grasping means, the  
3 protuberances are preferably formed on the replaceable insert  
4 member (preferably on the interior surface of the lip) for ease  
5 of mass fabrication and the engagement means are formed on the  
6 permanent vessel member (preferably on its exterior surface).

7 In another embodiment, the invention may be adapted to  
8 provide a condensation-free stemware structure. The stemware  
9 structure comprises a bowl member for holding a liquid and a  
10 hollow stem member supporting the bowl from its base. A  
11 collar-like ridge is formed generally at or near the junction  
12 of the stem and bowl members and is in communication with the  
13 hollow stem for collecting any condensation traveling  
14 downwardly from the bowl member and directing it into the  
15 stem. The stemware structure may be formed in a two piece  
16 structure wherein the bowl member includes a stem portion  
17 adapted to fit into an opening at the top of the stem member  
18 which thereby forms the collar-like ridge. Alternatively, the  
19 stemware structure may be an essentially unitary structure with  
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1 openings in the wall of the hollow stem adjacent the  
2 collar-like ridge which provides a ring-like trough that acts  
3 like a catch basin to collect condensation flowing down the  
4 bowl member and permit it to flow from the collar trough into  
5 the interior of the stem member. The unitary stemware may  
6 include a detachable stem base portion or a stopper-plugged  
7 hole in the stem base to facilitate removal of accumulated  
8 moisture.

9       It will be apparent from the foregoing general  
10 description, as well as the following detailed description,  
11 that the objects and advantages specifically enumerated herein  
12 are achieved by the present invention. For example, by  
13 providing an insert conforming to the configuration of a  
14 permanent vessel member, an interior space is provided which  
15 acts both as a thermal insulating barrier to liquid contained  
16 in the insert and as a shield against the formation of  
17 condensation on the exterior surface of the permanent vessel  
18 member. In addition, by providing the lip on such inserts, a  
19 shield is automatically formed to prevent the transmission of  
20 germs, bacteria, etc. from one user to the next when the insert  
21 is replaced, yet permit re-use of the permanent vessel member  
22 in a perfectly sanitary condition without requiring  
23 sterilization or washing.

24       By fabricating the insert so as to be disposable, the  
25 permanent vessel member can be re-used repeatedly without  
26 requiring any sterilization, yet the combination provides a  
27 sterile drinking vessel for different users of the permanent  
28 vessel. In addition, the grasping means associated between the  
29 insert and permanent vessel facilitates convenient storage of a  
30 stack of inserts while permitting the permanent member to be



1 quickly and easily combined with a fresh insert. Moreover, the  
2 insert can be adapted to conform to the shape of virtually any  
3 drinking vessel, e.g., a tumbler, a stemware piece, etc.

4 It will also be understood that by forming a series  
5 of protuberances on one vessel member and engagement means in  
6 the form of either a raised ridge structure or a recess or  
7 indentation arrangement (whether in continuous ring-like  
8 fashion or as a series of segments adapted to threadably engage  
9 the protuberances), a secure locking engagement will be  
10 achieved between the two vessel members while release of the  
11 members can be effected with relative ease. In addition,  
12 forming the protuberances on the disposable insert member,  
13 preferably on the interior surface of the lip formed  
14 will facilitate mass production by conventional two-part  
15 molding techniques and permit the inserts to be conveniently  
16 stacked on top of each other, yet will space the stacked  
17 inserts from each other to keep adjacent ones from sticking  
18 together when one is removed from the stack.

19 By providing a stemware structure with a hollow stem  
20 and a collar-like ridge in communication with the hollow stem,  
21 any condensation forming on the exterior of the bowl will flow  
22 into the hollow stem to provide a dry surface on the exterior  
23 of the stem for holding the stemware. In addition, the  
24 stemware structure according to the invention can be formed as  
25 a totally permanent, a partially disposable or a totally  
26 disposable drinking vessel.

27 It will be appreciated by those skilled in the art  
28 that the foregoing general description and the following  
29 detailed description are exemplary and explanatory of the  
30 invention but are not intended to be restrictive thereof.

1 Thus, the accompanying drawings, referred to herein and  
2 constituting a part hereof, illustrate preferred embodiments of  
3 the invention, and, together with the detailed description,  
4 serve to explain the principles of the invention.

5  
6 BRIEF DESCRIPTION OF THE DRAWINGS

7 FIGURE 1 is a front isometric view of one embodiment  
8 of a drinking vessel according to the present invention.

9 FIGURE 2 is a front isometric view of the outer, or  
10 permanent, vessel member of the embodiment of Figure 1.

11 FIGURE 3 is a front isometric view of the inner  
12 vessel member, or insert, of the embodiment of Figure 1.

13 FIGURE 4 is a sectional view taken along lines 4-4 of  
14 Figure 3.

15 FIGURE 5 is a sectional view, similar to Figure 4, of  
16 only the outer vessel member, showing a slightly modified  
17 embodiment.

18 FIGURE 6 is a front elevation view of the outer  
19 vessel member in the embodiment of Figure 1 showing still  
20 another modified embodiment.

21 FIGURE 7 is a sectional view, taken generally through  
22 the middle, of an insert member according to another preferred  
23 embodiment of the invention.

24 FIGURE 7A is a sectional view taken along lines 7A-7A  
25 of Figure 7.

26 FIGURE 8 is a view similar to that of Figure 7 of a  
27 preferred embodiment of a permanent vessel, or holder, for the  
28 insert member shown in Figure 7.

29 FIGURE 9 is also a view similar to that of Figure 7  
30 of a modified version of the structure shown in Figure 8.

FIGURE 10 is a front isometric view of an embodiment of a stemware structure according to the present invention.

FIGURE 10a is a partial front isometric view with partial cut-away section, of a modified version of the embodiment of Figure 10.

FIGURE 11 is a front isometric view of a modified embodiment of stemware according to the present invention.

FIGURE 11a is a partial front isometric view of a modified version of the embodiment illustrated in Figure 11.

FIGURE 11b is a partial front isometric view of another modified version of the embodiment of Figure 11.

#### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Turning now to the embodiments of the invention illustrated in the accompanying drawings, there is shown in Figures 1-9 various features according to one basic embodiment of the present invention.

Referring more particularly to Figures 1, 3 and 4, there is shown an embodiment of a drinking vessel according to the present invention which comprises an outer, or permanent, vessel member 10 which can be a tumbler-like vessel made of a permanent material such as, e.g., glass. Insert member 12 is proportioned to be received within outer vessel member 10 for receiving and containing any desired liquid or other substance. As preferably embodied, insert 12 is proportioned to conform generally to the configuration of the outer vessel, yet provide a spacing (indicated generally at 11) between the adjacent sidewalls and bottom walls of the outer vessel and the insert. The spacing 11 serves as a thermally insulative buffer to help reduce the thermal effect of the ambient atmosphere on the

1 contents of insert 12. Advantageously, then, insert member 12  
2 is proportioned to taper slightly in a direction from its top  
3 to its bottom relative to the sidewalls of permanent vessel 10  
4 so as to make essentially only line contact with vessel 10 at  
5 its top opening.

6 Also advantageously, insert 12 includes an exterior  
7 lip 12a depending from the entire top open edge, or upper rim,  
8 of the insert and extending downwardly towards the bottom of  
9 the insert. As preferably embodied, lip 12a is proportioned  
10 and angled relative to the exterior sidewall of permanent  
11 vessel 10 so as to substantially prevent a person's lip from  
12 contacting any exterior surface of vessel 10 when the person  
13 drinks from the insert. To this end, the width of lip 12a  
14 (i.e., the distance between the upper rim of the insert and the  
15 distal free end edge of the lip) may be from about 3/8" to  
16 about 1/2" (or even up to about 3/4") and may form an angle of  
17 up to about 35° with respect to the sidewalls of insert 12 to  
18 form an angle of up to about 30° with respect to the sidewall  
19 of vessel portion 10. In a particularly useful embodiment,  
20 insert lip 12a can be about 1/2" wide and extend at an angle of  
21 from about 3.5° to about 5° relative to the exterior wall of  
22 the second vessel member.

23 It will thus be understood by those skilled in the art  
24 that the width of lip 12a and the angle it forms with respect  
25 to the sidewall of vessel 10 cooperate to keep a person's lip  
26 spaced from the vessel sidewalls so as to prevent physical  
27 contact therewith. As a result, by adapting insert 12 so as to  
28 be disposable, the combination of insert 12 with permanent  
29 vessel 10 permits repeated re-use of the permanent vessel 10  
30 without requiring sterilization, simply by replacing the used

1 insert with a fresh one. Since the user's lips do not touch  
2 vessel 10, the passage of orally transmissible germs, bacteria  
3 and virus (e.g., herpes simplex) is effectively prevented, and  
4 the time, effort and cost of washing vessel 10 after every use  
5 is avoided.

6 In order to hold insert 12 sufficiently securely to  
7 vessel 10 while retaining a liquid therein, means are provided  
8 for forming a pressure-fit, or friction-fit, between insert 12  
9 and vessel 10. As shown in Figures 3 and 4, the pressure-fit  
10 means comprise raised ribs 12b formed on the exterior surface  
11 of insert 12, for providing a pressure/friction fit with the  
12 corresponding interior surface portions of vessel 10.  
13 Advantageously, ribs 12b are located substantially at or near  
14 the top of insert 12 (i.e., at about the widest part of the  
15 insert) for maximizing the pressure-fit generated between the  
16 insert and vessel 10. Also, by locating the ribs 12b adjacent  
17 the top edge of insert 12, a plurality of such inserts can be  
18 conveniently stacked one-on-another for minimizing the space  
19 they occupy while ensuring that adjacent inserts in the stack  
20 will not tend to stick together when the top insert is being  
21 removed.

22 Alternatively (or concurrently), raised ribs (show at  
23 10b in Figures 2 and 5) could be formed on the interior surface  
24 of vessel 10, substantially near or at its top edge so as to  
25 form a pressure/friction fit between the ribs 10b and a  
26 corresponding exterior surface of insert 12 (either against a  
27 smooth surface or in cooperation with ribs 12b). In still a  
28 further modification, ribs (not shown) could be formed on the  
29 interior-facing surface of lip 12a (alone or in combination  
30 with ribs 12b and/or 10b described above), substantially at the

1 top edge of the insert, so as to form a pressure/friction fit  
2 with the corresponding exterior surface of vessel 10 at its top  
3 edge. It will be appreciated that by forming pressure/friction  
4 fit ribs as disclosed herein, a vessel 10 can be thrust, open  
5 top facing downwardly, onto a stack of inverted inserts and  
6 thence raised, taking only one fresh insert from the stack to  
7 hold any desired liquids or other substance and then be removed  
8 for disposal after use.

9 In still a further modified embodiment of the  
10 invention, pressure/friction fit ribs, or radially inwardly  
11 extending fins (indicated at 10a in Figure 6) can be formed on  
12 the interior surface of vessel 10, near its bottom, to contact  
13 the corresponding exterior surface at the bottom of insert 12.  
14 Since insert 12 is preferably more tapered than vessel 10, ribs  
15 10a should project sufficiently far into the interior of vessel  
16 10 to grasp the insert. Alternatively, although not shown,  
17 pressure/friction fit fins could be formed on, and project  
18 radially outwardly from, the exterior surface of insert 12 near  
19 its bottom. Thus, as the insert is lowered into the permanent  
20 vessel 10 (preferably being tapered), the fins will engage the  
21 interior wall surface of vessel 10 until a secure pressure fit  
22 is formed.

23 It will be readily appreciated by those skilled in the  
24 art that the double-walled drinking vessel according to the  
25 present invention, as disclosed by the foregoing description  
26 with reference to Figures 1-6, provides a thermally insulated  
27 container wherein, e.g., a cold liquid or liquid-and-ice  
28 combination contained within insert 12 will experience  
29 prolonged temperature maintenance (for increased ice cube life).  
30 due to the thermal air barrier between insert 12 and permanent

1 vessel 10. In addition, because the exterior surface of vessel  
2 10 is physically separated and insulated from liquid-containing  
3 insert 12, any condensation resulting from a cold liquid in  
4 insert 12 will form on the exterior surface of the insert, not  
5 vessel 10, for ultimate collection within the interior of  
6 vessel 10, thereby eliminating the spotting and annoyance due  
7 to moisture dripping from the drinking vessel.

8 It will further be appreciated that the orientation  
9 and configuration of the insert lip permits re-use of a  
10 permanent drinking vessel without requiring sterilization.  
11 After use, the disposable insert is simply removed and thrown  
12 out. The permanent vessel can merely be wiped dry and then  
13 thrust down onto a stack of replacement inserts, whereupon, as  
14 indicated above, only one insert is grasped by the permanent  
15 vessel to instantly provide a clean and sanitary drinking  
16 vessel.

17 It will be understood that since insert 12 is  
18 preferably adapted to be disposable, it can be made of any  
19 known inexpensive plastic, such as, e.g., a material sold by  
20 E.I. duPont under the trademark designation "LUCITE" or similar  
21 material. The insert is preferably made of a transparent  
22 material to help create the impression that the insert/vessel  
23 combination is a traditional all-glass structure. In addition,  
24 raised ribs 10b or 12b could take the form of a band relatively  
25 small serrations on insert 12 and/or permanent member 10. It  
26 may, however, be preferable to form such serrated band on the  
27 interior surface of vessel 10 for grasping a smooth surface on  
28 the inserts for greater ease in fabricating inserts in large  
29 quantities and further ensuring that only one insert is removed  
30 from a stack at a time.

Turning now to Figures 7-9, there are shown various embodiments of the insert and vessel combination incorporating preferred grasping means according to the invention for releasably locking insert 12 to vessel member 10. As here preferably embodied, the grasping means comprise a series of protuberances (each designated 13) formed on the inwardly facing surface of lip 12a, with engagement means (described hereinafter) formed on the second vessel member for permitting releasable locking engagement therebetween for retaining the insert member within the permanent vessel member. Advantageously, protuberances 13 are generally hemispherical and substantially solid or otherwise formed so that the opposite exterior surface of lip 12a is essentially smooth. In this way, not only will the insert lip have an attractive exterior appearance, but also the protuberances will serve to space the adjacent inserts slightly from each other when stacked on top of each other for ensuring that the top-most insert will not stick to the next one when the permanent vessel member is thrust downwardly onto an inverted stack of inserts.

According to one preferred embodiment, the engagement means on vessel member 10 comprises a ring-like rib, or ridge, (indicated at 15 in Figure 8) projecting outwardly from, and extending completely around, the exterior surface of vessel 10. Ridge 15 is proportioned and located so as to allow the protuberances 13 to ride over its crest (or apex) to bear against the lower surface portion of the ridge and thereby releasably lock the insert within the permanent vessel. However, because of the resilience of the lip, the insert can be disengaged from the vessel simply by exerting a sufficient pulling force to cause the protuberances to ride back over the



1 crest of ridge 15.

2 A particularly useful embodiment of the vessel/insert  
3 combination utilizes the preferred grasping means of the  
4 invention with a tumbler-type drinking receptacle. In this  
5 embodiment, permanent vessel 10 may be about 3 1/2" tall and  
6 about 3 1/4" in circumference, and the insert is proportioned  
7 to fit within the permanent vessel, allowing a space (11) of  
8 from about 1/8" to about 1/4" between the two vessel members.  
9 Ring-like ridge 15 is formed on the exterior surface of vessel  
10 10, at a point approximately 0.3" from the upper rim of vessel  
11 10. The cross-sectional configuration of ridge 15 is generally  
12 bead-like, or semi-circular, having a radius of about 0.032".  
13 (The hemispherical protuberances 13 similarly have a radius of  
14 about 0.032".) Advantageously, the upper portion (indicated at  
15 10a) of vessel 10 has a slight outward flare between its upper  
16 lip and the ridge 15 in order to accommodate the flare of insert  
17 lip 12a. It will be understood that the provision of such  
18 flare on vessel 10 will also provide a so-called "negative  
19 draft" to facilitate formation of ridge 15 on vessel 10 by  
20 conventional two-part molding techniques.

21 The side wall of insert 12 may be at angle of about  
22 3.5° to about 4° (preferably about 3.7°) relative to the  
23 vertical, and lip 12a flares outwardly at an angle of about  
24 4.5° to about 5° (preferably about 4.7°) relative to the  
25 vertical. The lip is about 1/2" wide and the distal free end  
26 edge of the lip 12a is preferably rounded to prevent any  
27 possibility of cutting a user. The distance between  
28 protuberances 13 and the interior surface of the arched segment  
29 (designated 12d) which joins lip 12a to the insert sidewalls,  
30 and thus forms the upper rim of insert 12, is also

approximately 0.3" but preferably slightly larger than the corresponding dimension on vessel 10 to ensure that, once the insert is fully seated in the vessel, the protuberances will abut the underside of ridge 15 to keep the insert captive in the vessel. Advantageously, the lip and protuberances may be proportioned so that the protuberances will bear against the lower surface portion of ridge 15, just below the apex, to urge lip 12a slightly outwardly and thereby generate a slightly greater flare for spacing a user's lip farther from the exterior surface of vessel 10.

Referring now to Figure 9, there is shown an alternate embodiment of engagement means on vessel 10 for cooperating with protuberances 13 formed on insert 12. Instead of a continuous ring-like ridge 15 around vessel 10, a series of ridge segments (each designated 17) can be formed at generally the same upper exterior surface portion of vessel 10. It will be understood that there should be the same number of ridge segments as there are protuberances on insert 12.

Advantageously, each ridge segment is at a slight angle relative to the upper rim of vessel 10 for permitting threadable engagement with the protuberances. To facilitate proper threaded engagement, the uppermost end of each ridge segment should be closer to the upper rim of vessel 10 than the corresponding distance between the protuberances and the arched portion 12d of the insert, while the lowermost end of each ridge segment is spaced a slightly greater distance from the upper rim of vessel 10 than such corresponding distance. As a result, threadable engagement between the protuberances and the ridge segments is ensured, and there need not be any overlap (along the vertical direction) between any portions of adjacent

ridge segments, thereby permitting fabrication of vessel 10 by conventional two-part molding techniques.

In operation of the latter embodiment of engagement means, the insert is placed within vessel 10 and turned until each protuberance abuts the underside of a ridge segment. The insert will thus be locked in place within the permanent vessel, ready for use. By tightening the insert slightly, the protuberances will ride up along the underside of the ridge segments thereby increasing the flare of insert lip 12a slightly, in essentially the same way as explained above. After use, the insert is unthreaded by turning it in the opposite direction and simply lifted out of the vessel after the protuberances are clear of the ridge segments.

It will be understood by those skilled in the art that, instead of the ring-like ridge or ridge segments described above, the engagement means formed on vessel 10 for lockably engaging the protuberances could be in the form of indentations, or recesses, positioned and proportioned to register with and receive the protuberances. In addition, the protuberances could be formed on other portions of the insert, with the engagement means formed on a corresponding portion of the permanent vessel. If desired and mass fabrication techniques warrant, the protuberances could be formed on permanent vessel 10 and the engagement means formed on the inserts. However, for economy and ease of fabrication and for the advantages set forth above, it is preferred that the protuberances be formed on the inserts.

Turning now to Figure 10 there is shown a two-piece embodiment of a stemware structure adapted to provide a condensation-free exterior surface in accordance with the present invention. As here embodied, the stemware structure comprises bowl member 20 which may be in any desired configuration just like traditional glass stemware (e.g., as a champagne-style glass, a wine-style glass, continental-style glass, etc.) and a stem member 24 adapted to support the bowl member. Advantageously, stem 24 is generally hollow and is adapted to be attached to bowl 20 by releasably engaging bowl stem portion 22 (formed on the bottom of 20) when inserted into the open top of the stem. Advantageously, a gap is formed between stem 24 and stem portion 22 when coupled together to allow any condensation forming on the bowl to drop into the hollow stem. To this end, the interior surface of stem 24 near its open upper end is provided with rib members 26 (much like the ribs described above with reference to Figures 1-6) which are proportioned to form a pressure/friction fit with stem portion 22 of bowl 20, yet leave gaps between the upper interior wall of stem 24 and the exterior of stem portion 22.

In use, bowl member 20 is attached to stem 24 by inserting bowl stem portion 22 into the opening of hollow stem 24 until a snug pressure fit is formed between stem portion 22 and ribs 26. (To this end, stem portion 22 may taper slightly from its juncture with bowl 20 to its bottom and the radially interior surfaces of ribs 26 may be either substantially vertical or inclined so that the rib bottoms project inwardly a little more than the rib tops to ensure a snug fit at some point during insertion.) When a cold liquid or other substance is placed in bowl 20, any condensation forming on the bowl

1 will roll down its sides and onto stem portion 22 from which it  
2 drips harmlessly into the hollow chamber within stem 24.

3        Advantageously, and as preferably embodied, the walls  
4 of stem 24 diverge from each other (from top-to-bottom) so that  
5 as a person tips the stemware to drink from bowl 20,  
6 condensation collected within stem 24 will not spill out. As  
7 illustrated in Figure 7a, stem 24 could also include an  
8 interior cylindrical lip 27 depending from the open top of stem  
9 24 to help further prevent the chance of moisture spilling out  
10 while the stemware is tipped. Ribs 26 could, therefore, be  
11 formed on the interior of cylindrical lip 27 or on stem portion  
12 22. In either event, the top edges of ribs 26 are preferably  
13 located below the top edge of stem 24 to ensure that downwardly  
14 flowing moisture cannot flow over the edge and onto the  
15 exterior surface of stem 24.

16        After one or more fillings, bowl 20 can be detached  
17 from stem 24 and the condensation therein spilled out. It will  
18 be understood, then, that stem 24 can be made of glass or  
19 otherwise adapted to be permanent (like vessel 10 described  
20 above), while bowl 20 can either be disposable or permanent.  
21 (A disposable bowl 20 will obviate the need for sterilization,  
22 etc., like insert 12.) It will further be understood that  
23 because stem 24 is separated from bowl 20, the exterior surface  
24 of stem 24 will be virtually free of condensation to provide a  
25 dry surface portion for holding the stemware.

26        Turning then to Figure 11, there is shown a modified  
27 embodiment of stemware according to the present invention. The  
28 stemware structure of Figure 11 is adapted to be made of glass  
29 or otherwise adapted to be permanent in its entirety. As here  
30 embodied, this stemware structure includes bowl 30 (which may

1 be in any desired configuration) mounted to stem 32 which has a  
2 hollow interior portion (indicated at 34). A plurality of  
3 holes 36 are formed in stem 32 near its junction with bowl 30  
4 to provide flow communication between the exterior surface of  
5 stem 32 and hollow stem chamber 34.

6 A ring-like collar 38 is formed on stem 32  
7 substantially adjacent holes 36. Advantageously, collar 38  
8 generally encases holes 36 and forms a hollow ring-like trough  
9 (indicated at 38a) around the portion of the stem wherein holes  
10 36 are formed for collecting any condensation which drips down  
11 from bowl 30, as will be explained in greater detail  
12 hereinafter. As preferably embodied, collar 38 terminates in  
13 an edge spaced only very slightly from the exterior surface of  
14 stem 32, leaving only a narrow gap 38b therebetween  
15 sufficiently wide to permit dripping condensation to pass  
16 through the gap and into trough 38a.

17 In use, cold liquid or other substance is placed in  
18 bowl 30, as described above. Condensation forming on the  
19 exterior surface of bowl 30 will travel down that surface under  
20 the influence of gravity and onto the upper portion of stem 32.  
21 The travelling condensation then passes through gap 38b for  
22 collection within ring-like trough 38a. The moisture  
23 collecting in trough 38a then tends to drip harmlessly into  
24 hollow stem chamber 34. Advantageously, holes 36 are located  
25 at the bottom of the trough to ensure that virtually all the  
26 condensation collected therein falls into stem chamber 34.

27 It will be understood that by terminating the upper  
28 edge of collar 38 near the exterior surface of stem 32,  
29 moisture in trough 38a cannot flow out when a person tips the  
30 stemware to drink liquid in bowl 30. Similarly, the portion of

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1 stem 32 below collar 38 can be somewhat divergent (like stem 24  
2 described above) to ensure that any moisture in stem chamber 34  
3 will not spill out of holes 36 when the stemware is tipped for  
4 drinking. In addition, collar 38 can be formed with a  
5 decorative exterior pattern to camouflage its functional  
6 advantages, and, since gap 38b is relatively narrow, it will be  
7 somewhat difficult to determine that there are functional  
8 features incorporated into the stemware. Thus, the  
9 condensation-free stemware of the invention can be incorporated  
10 in a structure which is as attractive and elegant as most  
11 conventional stemware pieces.

12 After several uses, the accumulated condensation in  
13 chamber 34 can be removed simply by holding the stemware  
14 upside-down to permit draining, or by holding it by the stem  
15 base and swinging it away from oneself. Alternatively, as  
16 illustrated in Figure 11a, the bottom of stem 32 at the base of  
17 the stemware may be removably attachable to the remainder of  
18 the piece, as by threaded interconnection. Thus, the lower  
19 portion may simply be removed to permit quick and simple of the  
20 accumulated moisture.

21 As illustrated in Figure 11b, the bottom of the stem  
22 base may, instead, have a small hole 40 with a removable  
23 stopper member 42 to permit drainage of chamber 34. The bottom  
24 surface (43) of the stem base may preferably be raised slightly  
25 so that stopper 42 does not interfere with the normal standing  
26 of the stemware piece.

27 It will be appreciated by those skilled in the art  
28 that the invention in its broader aspects is not limited to the  
29 particular embodiments herein shown and described and that  
30 variations may be made which are within the scope of the

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1 accompanying claims, without departing from the principles of  
2 the invention and without sacrificing its chief advantages.  
3 For example, ribs, or radially inwardly projecting fins, may  
4 additionally be formed at the bottom interior of vessel 10  
5 disclosed in Figures 1-5 in combination with ribs 12b or 10b to  
6 enhance the grasping of insert 12. Similarly, the upper end of  
7 stem 24 (Figure 10) may be formed with a collar similar to  
8 collar 38 (Figure 11), and, openings could also be formed in the  
9 adjacent wall of stem 24 (instead of ribs 26 and the resultant  
10 gaps) to provide flow communication into the interior of stem  
11 24.

12 It will further be appreciated by those skilled in the  
13 art in view of the foregoing description that the lipped insert  
14 according to the present invention can be made to conform to  
15 the shape of the bowl of a stemware piece so that the stem of  
16 the stemware piece need not be hollow as described with  
17 reference to Figures 10-11.



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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A drinking vessel adapted to provide an exterior surface portion substantially free of condensation in the form of a stemware structure, comprising:

a first vessel member having an open top and being adapted to receive and contain any desired substance such as a liquid to be consumed;

a second vessel member associated with but generally separated from said first vessel member, said second vessel member being adapted to provide a barrier against formation of condensation on an exterior holding surface of said second vessel member, such that a person can hold said drinking vessel along the exterior holding surface of said second vessel member substantially without contacting any condensation and without any condensation dripping off said drinking vessel,

wherein said first vessel member comprises a bowl member with a stem portion extending downwardly therefrom, and wherein said second vessel member comprises a stem member having a generally hollow upstanding member which is open at its top and a base portion at its bottom, said stem portion of said bowl member being receivable within said stem member for connection therewith and providing access to the hollow interior of said stem member such that any condensation forming on any exterior surface of said bowl member tends to drip down along the exterior of said bowl member, onto said stem member and into the hollow interior of said stem member.

2. A drinking vessel according to claim 1, which further includes grasping/spacer means associated between said bowl stem portion and said stem member, said grasping/-spacer means being adapted to provide a releasable friction-type engagement between said bowl stem portion and said stem member yet provide access to the interior of said hollow stem base.

3. A drinking vessel according to claim 2, wherein said grasping/spacer means comprise a plurality of rib-like projection.

4. A drinking vessel according to Claim 3, wherein said rib-like projections are spaced along an interior surface of said stem member and are proportioned to grasp the bowl stem portion along radially inward edge portions of said rib-like projections, the spacings between the rib-like projections providing slot-like openings to permit the entry of condensation into the hollow interior of said stem member.

5. A drinking vessel according to Claim 4, which further includes an interior cylindrical lip extending downwardly from the open top of said stem member, said rib-like projections being formed on interior surface portions of said cylindrical lip.

6. A drinking vessel, according to Claim 4, wherein the uppermost portions of said rib-like projections are below the top edge of said stem member.

7. A drinking vessel according to Claim 1, which further includes a ring-like collar at the top of said stem member, said ring-like collar providing a trough-like recess for collecting condensation travelling down along said bowl member, and still further includes means providing flow communication between said trough-like recess and the hollow interior of said stem member for permitting moisture in said trough-like recess to flow into said hollow stem member.

8. A drinking vessel according to Claim 6, which further includes a ring-like collar at the top of said stem member, said ring-like collar providing a decorative ring around said stem member to help conceal internal structures helping keep said stem member condensation free.

9. A drinking vessel according to claim 4, wherein said stem member is divergent in configuration from its top to its bottom to help prevent moisture in said hollow stem member from spilling out when said drinking vessel is tipped.

10. A drinking vessel adapted to provide an exterior surface portion substantially free of condensation, comprising:

a first vessel member having an open top and being adapted to receive and contain any desired substance such as a liquid to be consumed;

a second vessel member associated with but generally separated from said first vessel member, said second vessel member being adapted to provide a barrier against formation

of condensation on an exterior holding surface of said second vessel member, such that a person can hold said drinking vessel along the exterior holding surface of said second vessel member substantially without contacting any condensation and without any condensation dripping off said drinking vessel,

said first and second vessel members being joined together in an essentially integral structure and wherein said second vessel member comprises:

a stem member which is hollow, at least in part, and which is coupled at its top to said first vessel member generally at its bottom,

at least one opening formed in said stem member to permit fluid flow into said hollow stem member, and

deflecting means extending around said stem member and located generally adjacent each said opening to direct fluid into each said opening, such that condensation forming on any exterior surface of said first vessel member can flow down along said first vessel member to said deflecting means for flow into said hollow stem member through each said opening.

11. A drinking vessel according to claim 10, wherein said deflecting means comprises a ring-like collar formed integrally with and around the stem member, said collar

providing a ring-like trough for collecting condensation and wherein each said opening is located generally at the bottom of said trough.

12. A drinking vessel according to Claim 11, which includes a plurality of said openings and wherein said collar and said openings are in close proximity to said first vessel member.

13. A drinking vessel according to Claim 10, which further includes a release means associated with said stem member for releasing accumulated moisture in said stem member.

14. A drinking vessel according to Claim 13, wherein said release means includes a portion of said stem being removable to permit fluid therein to be released.

15. A drinking vessel according to Claim 13, wherein said release means includes a hole in said stem member, generally at its bottom, to release moisture therein when desired, and removable stopper means for plugging said hole to allow moisture to collect in said stem member yet permit release of moisture when removed.



FIG. 1.

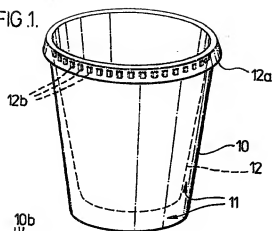


FIG. 2.

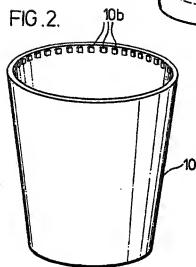


FIG. 3.

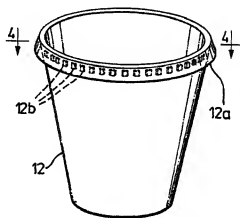


FIG. 4.

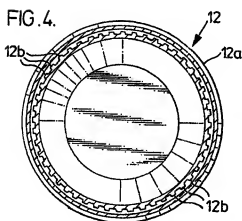
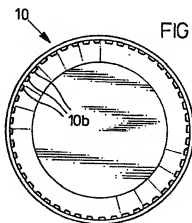


FIG. 5.



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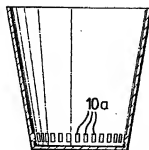


FIG. 6.

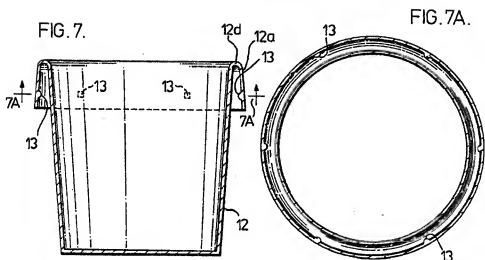


FIG. 7.

FIG. 7A.

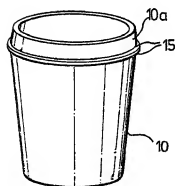


FIG. 8.

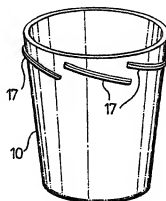


FIG. 9.

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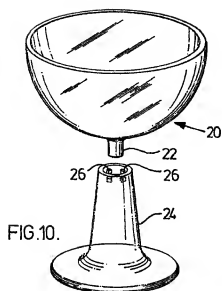


FIG. 10.

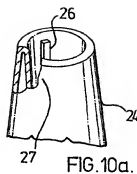


FIG. 10a.

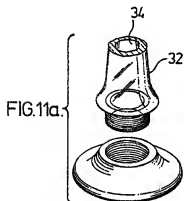


FIG. 11a.

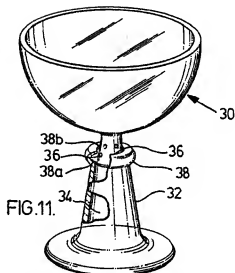


FIG. 11.

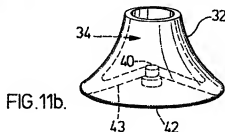


FIG. 11b.

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